



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

D205-634-041
Job Sheet 177919



Tel (613) 632-5200

Part No: D205-634-041

Job Qty: 1 ea

Part Name: Replacement Skidtube with Standard Wearplates Fits LH or RH



Part Weight: 0 lbs

Status: Scheduled

Priority: High

Job Created: 5/23/18

Job Tracking No:

Due Date: 6/6/18

Created By: Jesse White

Type: SOLD

Description:

Note: DWG D2580 REV H SHEETS 1,2,3,8 IPP Rev:N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30 KJ
IPP Rev P 10.02.19 per PAR09-043 EC verified by:DD IPP Rev. O 06.02.28 Added paperwork EC IPP Rev:P
07-07-09 SS Wearplates & Gaskets JLM IPP Rev:Q 10.12.01 as per chg003 DD ver:EC IPP REV:R 12.01.23
AS PER ECN11-684 VERF:EC IPP REV:S 17.12.08 REMOVE GASKET AS PER INTUITIVE INFO DD
VERF:JFS

Ship Via:

Bill of Materials



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Container No: S077486



Part: D205-634-041

Job No: 177919

Serial No/Batch: S077486

Revision: H

Inspector:

Exp Date: 06/04/2018

Instructions:

Date: 06/04/18

Job Routing									
Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea		6/6/18	0.00	0.00	Start Up Skid tubes		
110	CNC Bend Skid tubes	1 pcs		6/6/18	0.00	0.65	CNC Bend Skid tube		
120	Skid tubes	1 pcs		6/6/18	0.00	2.89	Skid tubes-2		
130	QC	1 pcs		6/6/18	0.00	0.00	QC5		
140	Skid tubes	1 pcs		6/6/18	0.00	2.89	Skid tubes-2		
150	QC	1 pcs		6/6/18	0.00	0.00	QC10		
160	QC	1 pcs		6/6/18	0.00	0.00	QC5		
170	HandFinish	1 pcs		6/6/18	0.00	1.31	HandFinish1		
180	Powdercoat	1 pcs		6/6/18	0.00	0.34	Powdercoat1		
190	QC	1 pcs		6/6/18	0.00	0.00	QC3		
200	HandFinish	1 pcs		6/6/18	0.00	1.31	HandFinish4		
210	QC	1 pcs		6/6/18	0.00	0.00	QC5		
220	Packaging	1 pcs		6/6/18	0.00	0.00	Packaging3-1		
225	DC	1 pcs		6/6/18	0.00	0.00	DC		
230	QC21-FG	1 Ea		6/6/18	0.00	0.00	QC21		

Part Op 110 - 1-Bend as per program D2580.C on CNC Bender and Folio 16 2-Cut tubes as per Dwg. D2580 3- scribe batch# in Descriptions: aft end of tube.

120 - 1- Deburr ends and remove bending marks 2- Prepare tube for welding as per QSI 004

140 - 1-Weld step D2576 as per Dwg. D2580 and QSI 004 2-Grind welds on step as per Dwg D2580 3- Insert D4202-1 spacer, swage as per QSI002 and trim/ grind flush per QSI002 and dwg. Hold x-bolt with DT9701 Use tube expander 1/2 x17G to start expansion and finish with 1/2 x 18G to achieve dwg dimention. 4-Drill holes for wearplates using DT 8217 & DT8937, 7.40" from most fwd saddle holes (ref only) Open holes to 19/64", adjust stopper not to hit web.Deburr 5-Drill pilot holes for aft cap using DT 8215Open holes to 0.208". Deburr 6-Drill pilot holes for Tow ring using DT8091, open to .640"and Deburr

170 - Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch and leave fwd cap out of solution.

180 - START TIME: 11:50 OVEN TEMPERATURE: 800° FINISH TIME: 12:00

200 - 1-Install inserts & wearplates as per Dwg. D2580. Use a drop of Sikaflex on insert holes before installing wearplates A/R Sikaflex-291 1138757 Sikaflex expire date: 18/12 2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594-1 plugs as per Dwg D2580 3-Inspect for foreign object per QSI 024 4-Install 2855 Aft Cap as per Dwg D2580 and seal Fwd Step & Aft Cap with Sikaflex. Clean excess adhesive A/R Sikaflex-291 1138757 Sikaflex expire date: 18/12 5-Wing Walk as per Dwg D2580 and QSI 005 4.4 Batch: 1138757

210 - Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for Foreign objects per QSI 024

220 - Identify and pack for shipping as per PPPD205-634-041 Location: PPP Rev:

225 - Photocopy D205-634 bluefile & type labels per PPP D205-634-041 CHG006

Job BOM				
Part / Item	Component Name	Quantity	Operation	Container
D2580-1	205 Bent Tube	1 Ea (1 ea)	90-Start up Operation	5036456
D2576-3	Step (Machining Detail)	1 Ea (1 ea)	140-Skid tubes	5069014
D4202-1	Spacer	20 Ea (20 ea)	140-Skid tubes	5064571
ALS7-1032-130	Rivnut	50 Ea (50 ea)	200-HandFinish	5045668
AN3-5A	Bolt	2 Ea (2 ea)	200-HandFinish	5041106-1
AN3C4A	Bolt	50 Ea (50 ea)	200-HandFinish	5041114
D2594-1	Plug	16 Ea (16 ea)	200-HandFinish	5059021
D2594-3	O-Ring	16 Ea (16 ea)	200-HandFinish	5049975
D2855	Cap	1 Ea (1 ea)	200-HandFinish	F151613
D3564-11	Wearplate Aft	1 Ea (1 ea)	200-HandFinish	5045366
D3564-13	Wearpad Fwd	1 Ea (1 ea)	200-HandFinish	5045900
D3564-5	Wearplate Center	1 Ea (1 ea)	200-HandFinish	5045900
D3564-9	Wearplate Fwd	1 Ea (1 ea)	200-HandFinish	5045900
NAS1149C0332R	Washer	50 Ea (50 ea)	200-HandFinish	5054592
NAS1149D0332J	Washer	2 Ea (2 ea)	200-HandFinish	5056493

003700

Job Allocations				
Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	D2580-1	1	0	0
	D2576-3	1	43	0
140-Skidtubes	D4202-1	20	413	0
	ALS7-1032-130	50	2,049	0
200-HandFinish	AN3-5A	2	314	0
	AN3C4A	50	2,319	0
	D2594-1	16	504	0
	D2594-3	16	773	0
	D2855	1	95	0
	D3564-11	1	20	0
	D3564-13	1	17	0
	D3564-5	1	14	0
	D3564-9	1	20	0
	NAS1149C0332R	50	7,148	0
	NAS1149D0332J	2	2,291	0
Part Specifications				
Specifications could not be found.				

Plex 5/23/18 10:12 AM dart.white.jesse

ITEM	QTY -041	QTY -043	QTY -047	QTY -040	PART NUMBER	DESCRIPTION
1	X				D2580-041	SHOOTURE ASSEMBLY
2		X			D2580-045	SHOOTURE ASSEMBLY
3			X		D2580-047	SHOOTURE ASSEMBLY
4				X	D2580-048	SHOOTURE ASSEMBLY
20	1	1	1	1	D2580-1-100	EXTRUSION
21			16	16	D2580-046	BUSHING
22	1	1	1	1	D2580-3	STEP
23		4			D2580-4	SPACER
24	16	16	8	8	D2580-1	PLUG
25	16	16	8	8	D2580-3	CHIRING
26	1	1	1	1	D2580-5	205 WEB
27	1	1	1	1	D2580-6	APT CAP
28	1	1	1	1	D2580-7	WEARSHOE
29	1	1	1	1	D2580-8	WEARSHOE
30	1	1	1	1	D2580-11	WEARSHOE
31	1	1	1	1	D2580-13	WEARSHOE
32	20	20	24	24	D4000-1	SPACER
33			1	1	D4000-041	WEARPLATE ASSEMBLY
34			1	1	D4000-043	WEARPLATE ASSEMBLY
35				1	D5001-1	FRND WEARPLATE
36				1	D5001-3	AFT WEARPLATE
37	60	60	60		ALS7-1002-130 or AK54-1002-130 or AEL5-1002-130	INSERT
38					ANS44	BOLT
39	2	2	2	2	ANS-5A	BOLT
40			8	8	ANA-45A	BOLT
41	80	80			NAS1140C0032R	WASHER (AN600C10L)
42	2	2	2	2	NAS1140C0032L	WASHER (AN600C10L)
43			8	8	INERT02-4	NUT (OR INERT043L4)

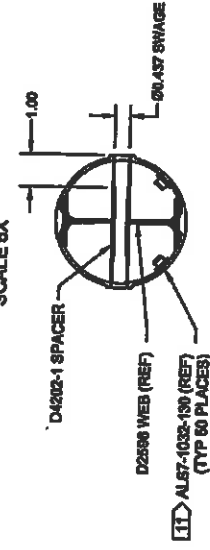
GENERAL NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION PER DART QSI 005 4.1 PRIOR TO INSERTING D2580 WEB POWDER COAT (444-047-046) GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3 BLACK ANTI-RUST PER DART QSI 005 4.4.1 AS INDICATED PER DART QSI 005 4.4.1. TOLERANCES ARE PER DART QSI 010 UNLESS OTHERWISE NOTED.
- 3) TOLERANCES ARE PER DART QSI 010 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: D2580-041 = 53.7 lbs
D2580-045 = 53.1 lbs
D2580-046 = 52.0 lbs
D2580-047 = 52.0 lbs
D2580-048 = 52.0 lbs
- 8) WELDING PER DART QSI 004
- 9) INSERT D2580 WEB TO LOCATION SHOWN OFF AFT END OF SHOOTURE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-461 ADHESIVE PER DART QSI 010 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 10) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.300 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 11) USE DART DRILL TEMPLATE DTS217 & DTS217 ONLY FOR D2580-041-045 TO LOCATE AND DRILL 60.287 HOLES FOR WEARSHOE INSERTS. NOT ALL 157-1002-130 PER SECTIONS B-B AND F-F (80 PLACES) AFTER FINISH. INITIAL ANSCA BOLTS AND NAS1140C0032R WASHERS WITH SIKAFLEX-461/421.
- 12) INSERT D2580-1 PLUS CMT D2580-3 0.2870 IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES FOR D2580-041-045 AND 8 PLACES FOR D2580-047-048)
- 13) IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2580 AFT CAP TO PREVENT INTERFERENCE WITH THE SPACER AT THIS LOCATION

RELEASED
2017 JUL 05 4
EART-259

H	SHEET 1: IN DELETE D2580-1/5-13 GASKETS, WEIGHTS UPDATED ACCORDINGLY. SHEETS 2 & 4 PICTORIAL UPDATE FOR REMOVAL OF GASKETS	SAD	17.08.09
G	ADDED -046, -047 WEIGHT UPDATED PER DSI 8008	ASB	14.04.09
F	INCORPORATE DEC D2580-E-1 PER PAR12-218	DC	13.05.00
E	ADD D2580-047 (2N C4-7) AND D2580-7 (2N IS-4) INCLUDED DEC D2580-0-1; RECONFIGURED DRAWING TO CURRENT STANDARDS; DTS217 & DTS217 WAS D2580-7-205 (2N C4-1)	RF	11.08.21
D	CHANGE TO IS WEARPLATES AND GASKETS,	PH	07.04.06
C	INCLUDE DEC 0124/0118	CP	06.08.26
B	REDRAWN, INCLUDED DEC 0084/0087	DS	05.12.02
A	AS MANUFACTURED	DS	06.08.16
A	NEW ISSUE	RY	DATE
DESIGN	DS	DATE	
DRAWN	SAD		
CHECKED			
INFL. APPR.	D2580	DRAWING NO.	REV. H
APPROVED			SHEET 1 OF 9
DATE	17.08.09	TITLE	SCALE
		205 SHOOTURE ASSEMBLY	NTS

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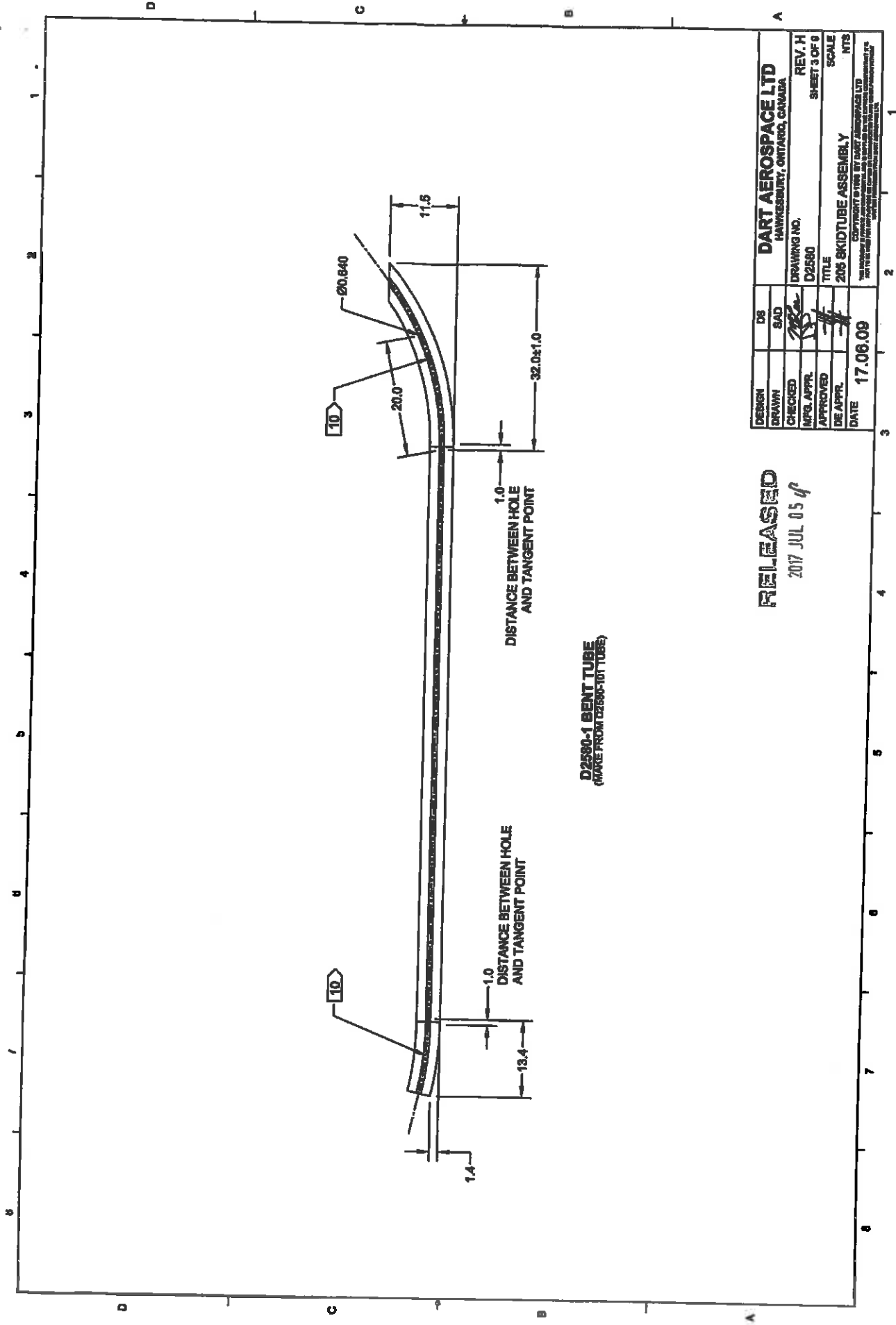


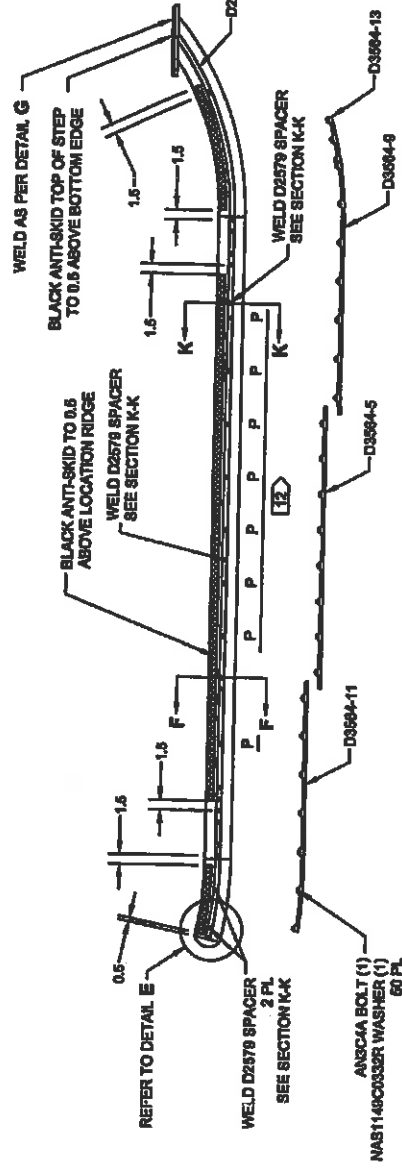
DETAIL C
SCALE 6X



DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

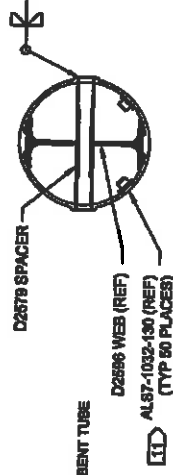
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MFG. APPR.		
APPROVED		
DE APPR.		
DATE	17.08.09	





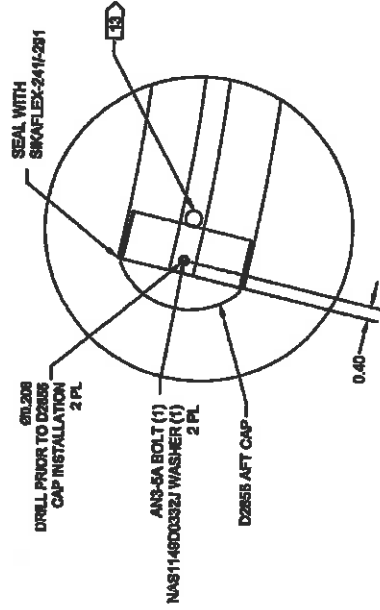
Δ D2580-045 ASSEMBLY DETAIL

**SECTION K-K
SCALE 5X**



AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:
1. CHAMFER HOLE 0.050 X 45°
2. INSERT D2579 SPACER (4 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. DO NOT SCORE

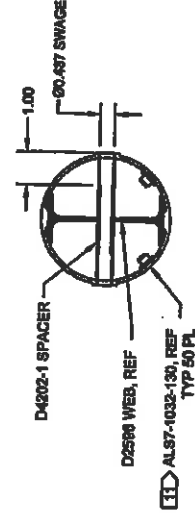
**DETAIL E
SCALE 5X**



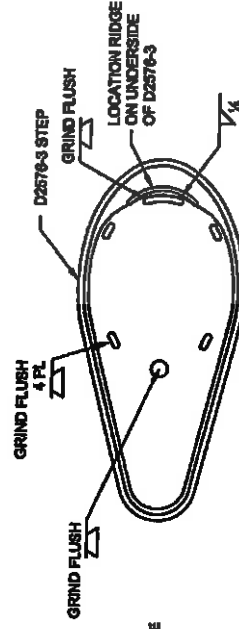
RELEASED
2017 JUL 05

AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:
1. INSERT D4302-1 SPACER (20 PLACES)
2. SWAGE TO Ø0.437 X 1.00 DEEP PER Q81 002
3. TRIM/GRIND FLUSH PER Q81 002

**SECTION F-F
SCALE 5X**

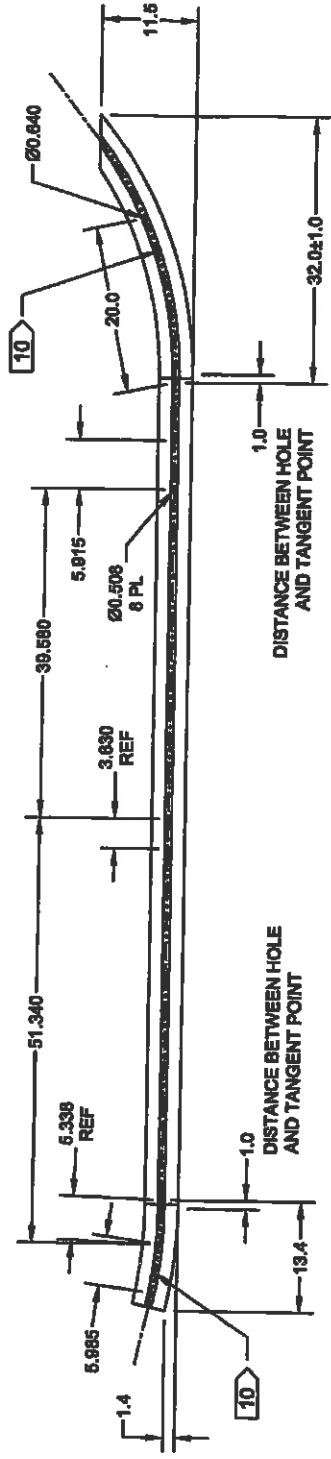


**DETAIL G
SCALE 5X**



DESIGN	DS	DART AEROSPACE LTD
DRAWN	SAD	KANWISBURY, ONTARIO, CANADA
CHECKED	APR	DRAWING NO. D2580
INFS. APRL	APR	REV. H
APPROVED	APR	SHEET 4 OF 9
DATE	17.08.09	TITLE
		205 SKIDTUBE ASSEMBLY
		SCALE
		NTS

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D2580-5 BENT TUBE
(MAKE FROM D2580-101 TUBE)

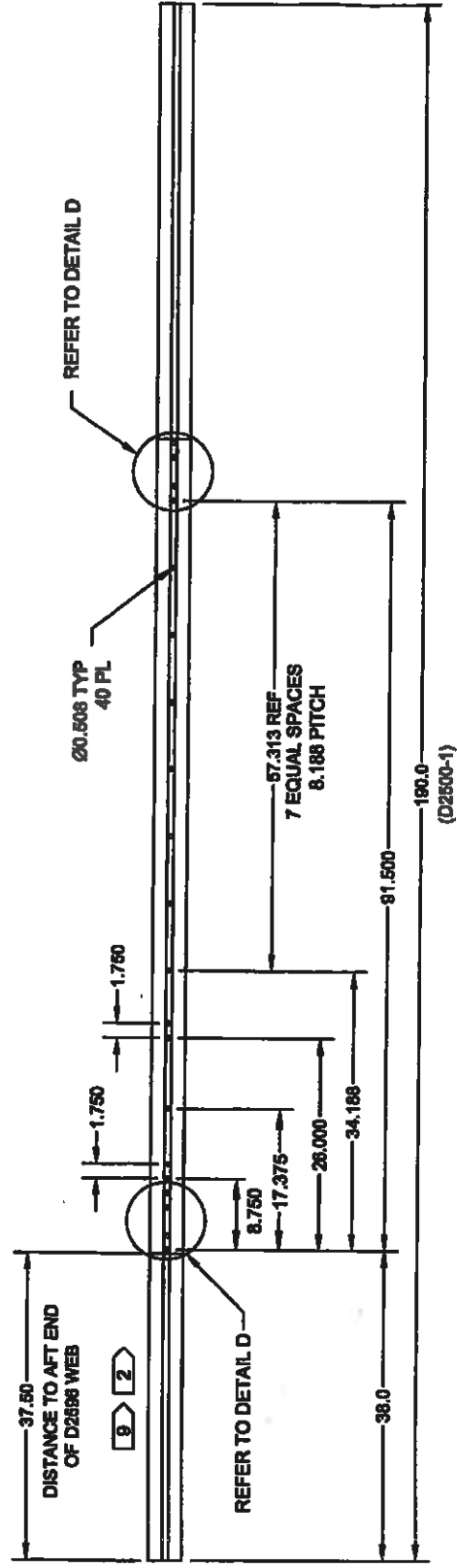
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2017 JUL 05

DESIGN	DS	DART AEROSPACE LTD
DRAWN	SAD	HAWKESBURY, ONTARIO, CANADA
CHECKED	RE	DRAWING NO.
MRG. APPR.	RE	D2580
APPROVED	RE	REV. H
DATE	17.06.09	SHEET 5 OF 6
		TITLE
		205 SKIDTUBE ASSEMBLY
		SCALE
		NTS
		IF DIMENSIONS ARE NOT SPECIFIED BY DART AEROSPACE LTD
		THE DIMENSIONS OF COMPONENTS SHALL BE TO THE DIMENSIONS OF THE
		COMPONENTS AS SUPPLIED BY THE MANUFACTURER.

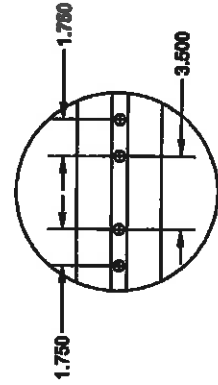


AWESOME

2017 JUL 05 *af*



D2580-101 TUBE



DETAIL D
SCALE 5X

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2017 JUL 05

DESIGN	D8	DART AEROSPACE LTD HAMMERSMITH, ONTARIO, CANADA
DRAWN	SAD	
CHECKED	SA	
MFG. APPR.		DRAWING NO. D2580
APPROVED		REV. H SHEET 9 OF 9
DE APPR.		TITLE 205 SKIDTUBE ASSEMBLY
DATE	17.06.09	SCALE NTS

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and 17 June 2019

DQA: _____
Date: _____

QA Closed: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

Work Order update only



Work Order: 174919		DISPOSITION		AGAINST DEPARTMENT/PROCESS	
Part No. D205-634-041		Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		Skid-tube ☒ Machining ☐ Thermoforming ☐ Large Fab ☐	
NCR No. 19-7139		Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐		Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐	
Date: 18-06-06	Step #: 140	QTY Effective: 1		MRB (Q51042) Approval	
Description Work Order Deviation		Disposition		Completed By	
WEAPPLATE Holes Drilled incorrectly location of hole is a find and just before bend.		weld up improperly placed Holes + Re-Drill Acceptable weld-repair location per 1CA-025634 Rev. 6. The small weld plugs will have negligible effect on the strength.		Lead hand / Supervisor Approval Verification 18-06-06 QC / QA Coordinator Approval 18-06-07	
Root Cause Environment ☐ No Re-verification ☐ Design ☐ Operator ☒ Doc/Data ☐ Offset/Setup ☐ Equip/Tooling ☐ Supplier ☐ Handling/Pre ☐ Training ☐ Material ☐ Use for Testing ☐ Internal Transport ☐ Poor Information ☐ Tribal Knowledge ☐ Rushing ☐ LQA ☐ Product Improvement ☐ Substation ☐ Process Improvement ☐ Past Expiry Date ☐ Manufacturing Process ☐ Misidentified ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Temperature/Cure ☐ Bending ☐ Set-up ☐ Centre Not Concentric ☐ BOM/Route ☐ Cracks ☐ Broken/Damage/Defect ☐ Crimp/Kink/Ripple/Wave ☐ Inspection Incomplete/Unqualified ☐ Cuffs ☐ Contamination ☐ Crushing ☐ Countersink ☐ Heat Treat ☐ Cut Too Short ☐ Wave/Twist in Tube ☐ Instructions Incomplete/Unclear ☐ Marks/Chatter ☒ Drill Holes ☐			
OTHER :		Power Loss/Surge ☐ Positioned Wrong ☐ Folio/Program ☐ Outside Dimensions ☐ Grain ☐ Over/Under tolerance ☐ Weld ☐ Part Incorrect ☐ Wrong Stock Pulled ☐ Part Lost/Missing ☐ Out of Sequence ☐ Part Moved ☐ Off-set ☐ Drawing ☐ Mislabeled ☐ Finish ☐ Fit/Function ☐ Misread ☐ Misaligned/off center ☐ Turning Sequence ☐			